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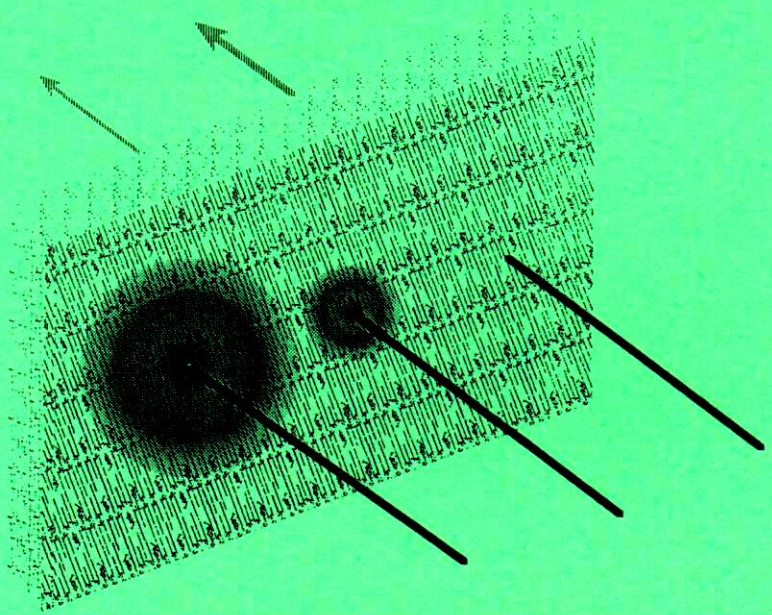

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EFFECT OF WOOL LIPID LIPOSOMES ON SKIN BARRIER FUNCTION

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Intercellular lipids of the stratum corneum (SC) play an essential role in the barrier function[1] and in regulating the water-holding capacity of the skin[2]. The structure of liposomes, which mimics the organised lipid structures of the SC, offers a suitable strategy for achieving an accurate vehiculisation of a particular compound and for incorporating an additional lipid content that modifies the skin properties.

The internal lipids extracted from wool fibre have a composition similar to that found in membranes from other keratinised tissues such as SC or human hair[3]. Furthermore, the internal wool lipids have been shown to form stable liposomes[4].

In the present work liposomes made up of these internal wool lipids were topically applied on the forearm of volunteers in two ways: a single application on disturbed skin and a daily application during some days on healthy skin. Transepidermal water loss and skin capacitance were used as non-invasive bioengineering methodologies to assess the effect of these liposomes on the water-barrier properties of the SC. The results indicated that a single, topical application of the wool lipid liposomes accelerated the repair of the skin barrier function and the water-holding capacity. Moreover, these liposomes eventually reinforced the skin barrier and increased the water content on healthy skin after daily application. These findings lend support to the view that the internal wool lipids are suitable for designing new pharmaceutical or cosmetic products for the treatment, prevention and care of skin.

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